Electronic TUBES

6J6—5J6—19J6

TWIN TRIODE

DESCRIPTION AND RATING

The 6J6 is a miniature medium-mu twin triode designed for use as a radio-frequency amplifier, oscillator, or mixer. With the grids connected in push-pull and the plates connected in parallel, each type may be used as a mixer at frequencies as high as 600 megacycles.

The 5J6, 6J6, and 19J6 are alike except for heater ratings and heater-cathode ratings. The 5J6, in addition, exhibits a controlled heater warm-up characteristic which makes the tube especially suited for use in television receivers which employ series-connected heaters. When the 5J6 is used in conjunction with other 600-milliampere types which exhibit essentially the same heater warm-up characteristic, heater voltage surges across the individual tubes are minimized during the warm-up period.

GENERAL

ELECTRICAL

Cathode—Coated Unipotential

	5J6	6J6	19J6	
Heater Voltage, AC or DC	4.7	6.3	18.9	Volts
Heater Current	0.6	0.45	0.15	Amperes
Heater Warm-up Time*	11			Seconds

Direct Interelectrode Capacitances	With Shield†	Without Shield	
Grid to Plate, Each Section	1.5	1.6	μμf
Input, Each Section	2.6	2.2	μμf
Output, Section 1	1.6	0.4	μμf
Output, Section 2	1.0	0.4	μμf

MECHANICAL

Mounting Position—Any

Envelope—T-5½, Glass

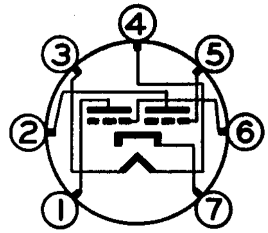
Base—E7-1, Miniature Button 7-Pin

MAXIMUM RATINGS

DESIGN-CENTER VALUES, EACH SECTION	Class A_1 Amplifier	Class C Telegraphy	
Plate Voltage	300	300	Volts
Positive DC Grid Voltage	0	0	Volts
Negative DC Grid Voltage	...	40	Volts
Plate Input	...	4.5	Watts
Plate Dissipation	1.5	1.5	Watts
DC Plate Current	...	15	Milliamperes
DC Grid Current	...	8.0	Milliamperes

	Class A_1 5J6 6J6	Class A_1 19J6	Class C 5J6 6J6	Class C 19J6	
Heater-Cathode Voltage					
Heater Positive with Respect to Cathode					
DC Component	100	...	100	...	Volts
Total DC and Peak	200	100	200	100	Volts
Heater Negative with Respect to Cathode					
Total DC and Peak	200	100	200	100	Volts
Grid Circuit Resistance					
With Cathode Bias‡	0.5	0.5	...	...	Megohms

BASING DIAGRAM

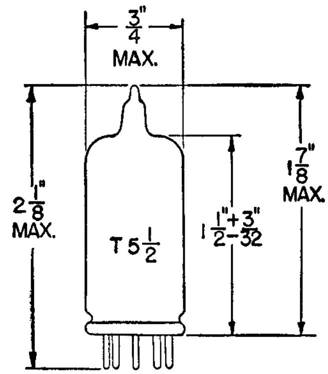


RETMA 7BF

TERMINAL CONNECTIONS

- Pin 1—Plate (Section 2)
- Pin 2—Plate (Section 1)
- Pin 3—Heater
- Pin 4—Heater
- Pin 5—Grid (Section 1)
- Pin 6—Grid (Section 2)
- Pin 7—Cathode

PHYSICAL DIMENSIONS



RETMA 5-2

CHARACTERISTICS AND TYPICAL OPERATION

CLASS A_1 AMPLIFIER, EACH SECTION§

Plate Voltage	100	Volts
Cathode-Bias Resistor	50	Ohms
Amplification Factor	38	
Plate Resistance, approximate	7100	Ohms
Transconductance	5300	Micromhos
Plate Current	8.5	Milliamperes

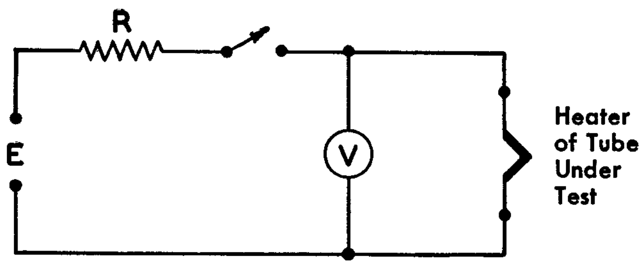
CLASS C TELEGRAPHY, RF POWER AMPLIFIER AND OSCILLATOR—BOTH SECTIONS IN PUSH-PULL

DC Plate Voltage	150	Volts
DC Grid Voltageπ	−10	Volts
DC Plate Current	30	Milliamperes
DC Grid Current, approximate	16	Milliamperes
Grid Driving Power, approximate	0.35	Watts
Power Output, approximate	3.5	Watts

MIXER SERVICE, EACH SECTION△

Plate Voltage	150	Volts
Cathode-Bias Resistor	810	Ohms
Oscillator Peak Voltage	3.0	Volts
Plate Resistance, approximate	10200	Ohms
Conversion Transconductance	1900	Micromhos
Plate Current	4.8	Milliamperes

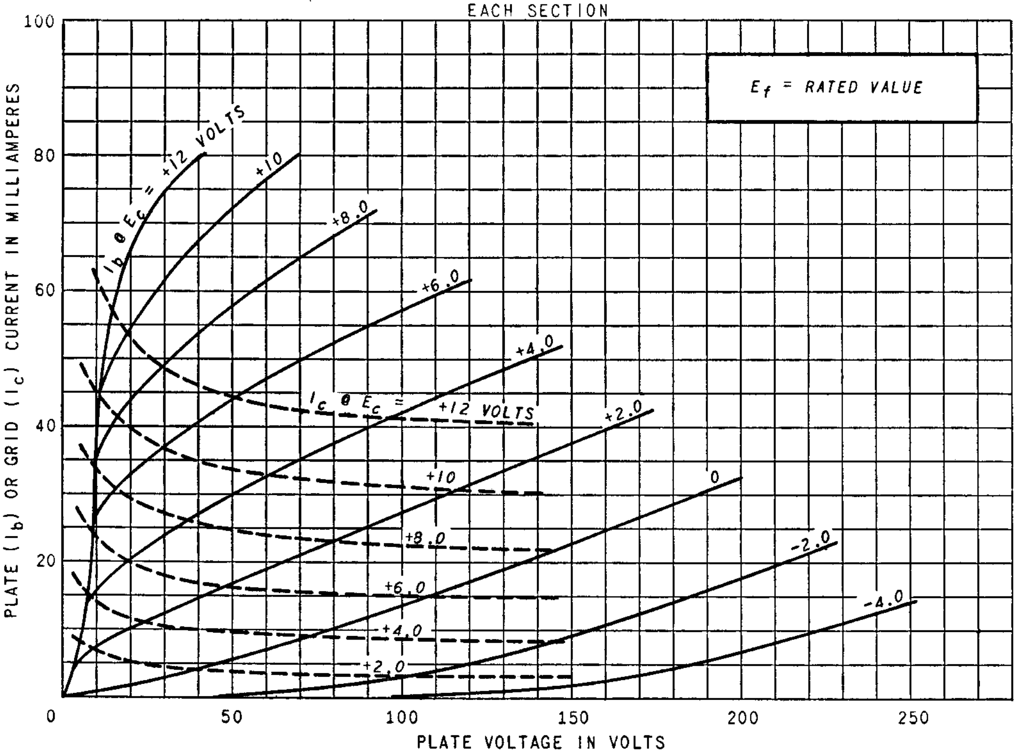
* Heater warm-up time is defined as the time required in the circuit shown at the right for the voltage across the heater terminals to increase from zero to the heater test voltage (V_1). For this type, E = 18.7 volts (RMS or DC), V_1 = 3.73 volts (RMS or DC), and R = 23.5 ohms.



† With external shield (RETMA 316) connected to pin 7.
‡ Operation with fixed bias is not recommended.
§ Each section separately with specified voltages applied to both sections.
π Obtained by a 625-ohm grid resistor, a 220-ohm cathode resistor, or a fixed-voltage supply.
△Each section separately with grid and plate of opposite section grounded. In actual service, the value of the cathode-bias resistor is determined by the total cathode current of both sections.
Note: Approximately 1.0 watt can be obtained when the tube is operated as a push-pull oscillator at 250 megacycles with a plate voltage of 150 volts, with maximum rated plate dissipation, and with a grid resistor of 2000 ohms common to both sections.

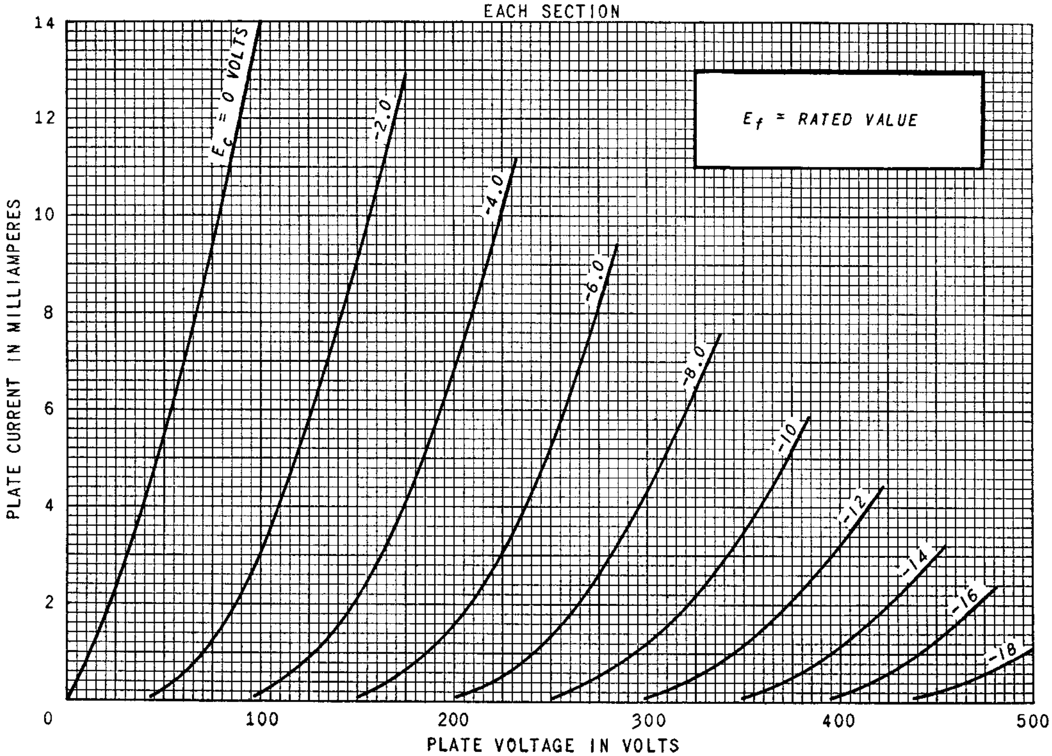
AVERAGE PLATE CHARACTERISTICS

EACH SECTION



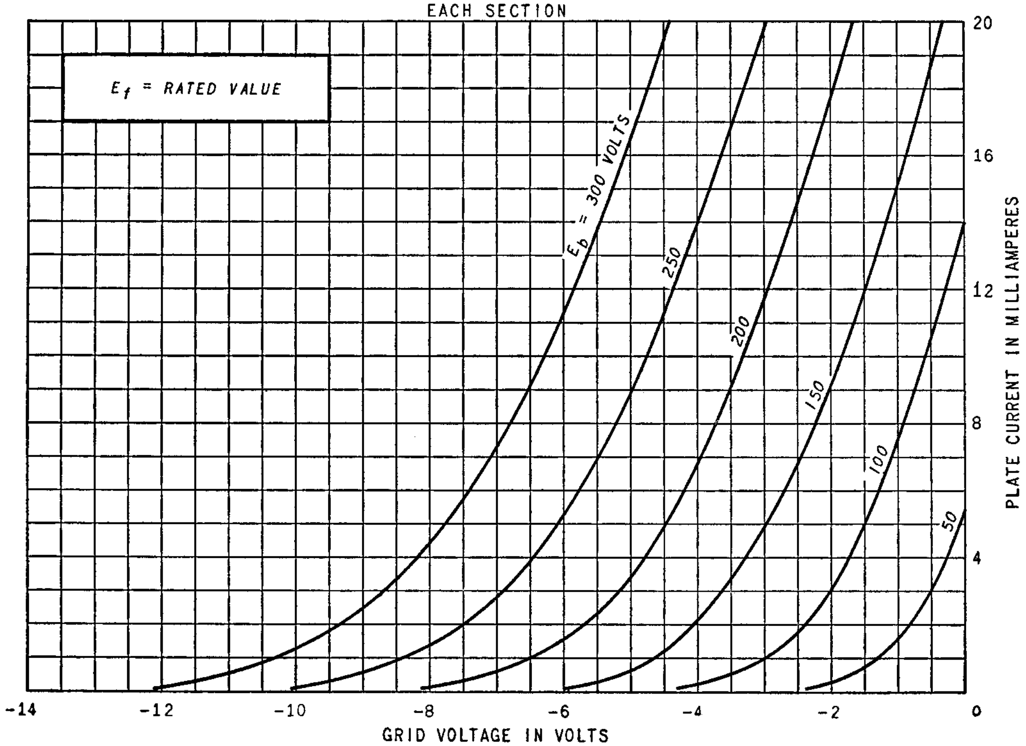
AVERAGE PLATE CHARACTERISTICS

EACH SECTION



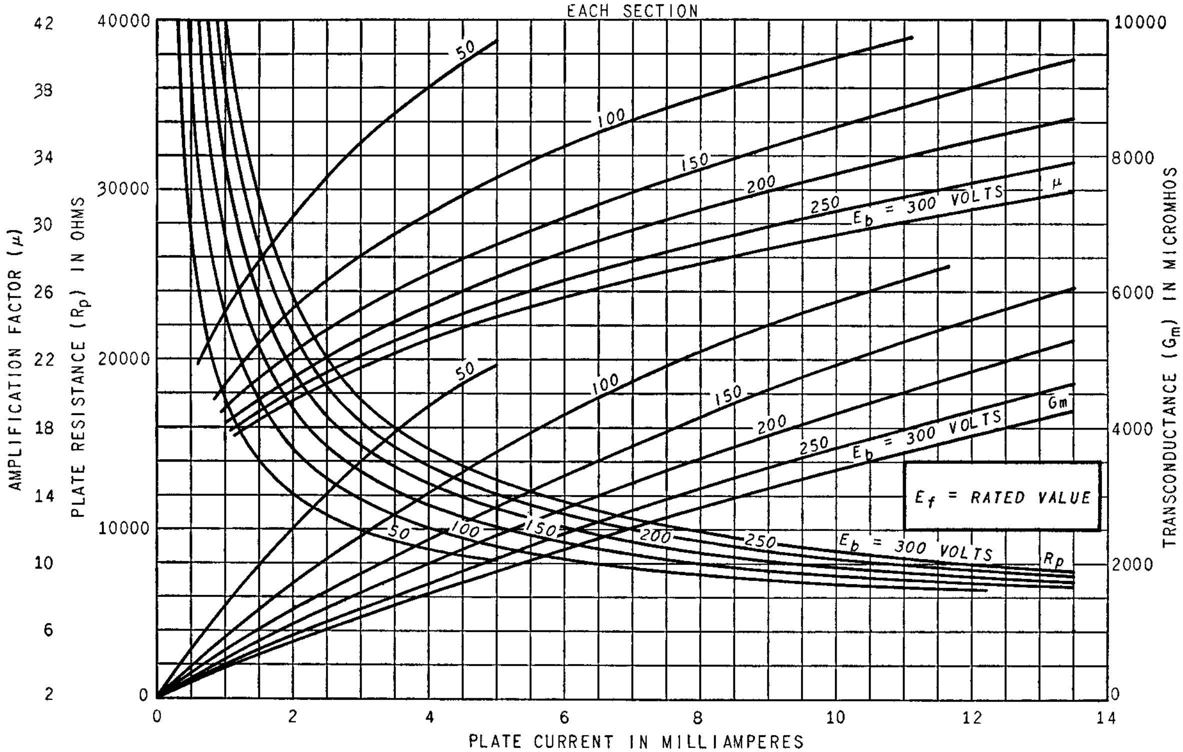
AVERAGE TRANSFER CHARACTERISTICS

EACH SECTION



AVERAGE CHARACTERISTICS

EACH SECTION



TUBE DEPARTMENT

GENERAL ELECTRIC

Schenectady 5, N. Y.